

## II. HOSPITAL PARTICIPATION

CCMRP depends on the voluntary participation of hospitals to produce comparative bypass surgery outcome results. Of 119 California hospitals performing adult CABG surgeries in 1999, 70 hospitals agreed to submit data, participate in the audit and publicly report their results, while 49 hospitals did not participate for various reasons (see Table 1).

Enrollment in CCMRP is ongoing and evolving. As part of the recruitment process, all hospitals that performed at least 25 adult CABG surgeries received multiple mailings and phone calls to enlist interest and participation between Fall 1996 and March 1999, including a final invitation letter sent by certified mail to the CEOs of non-participating hospitals. The letter provided a deadline for joining the program and indicated that hospitals declining to participate would be listed as such in the public report. Likewise, hospitals that wished to begin participation in the program with the 1999 data collection period were given a deadline for joining the program, beyond which they would be listed as declined to participate in the 1999 report.

Hospitals listed as participating agreed to:

- Report pre-operative risk factors and mortality data for all isolated CABG surgeries performed during the calendar year (a hospital was not permitted to participate if it chose to submit only a portion of its caseload);
- Participate in a training session designed to improve consistency in coding practices across hospitals;
- Submit data on a quarterly basis using a standard data entry format and standard variable definitions;
- Participate in an independent medical records audit to verify data quality; and,
- Publicly release their risk-adjusted mortality rates.

Figure 2 depicts the steps in the recruitment, data collection, verification, and analysis phases of the project and the number of hospitals at each phase for the 1999 data analysis period. After the initial recruitment phase, there were several points in the program where hospital attrition occurred.

**Figure 2: Summary of Hospital Participation in 1999 CCMRP Data Reporting Program**

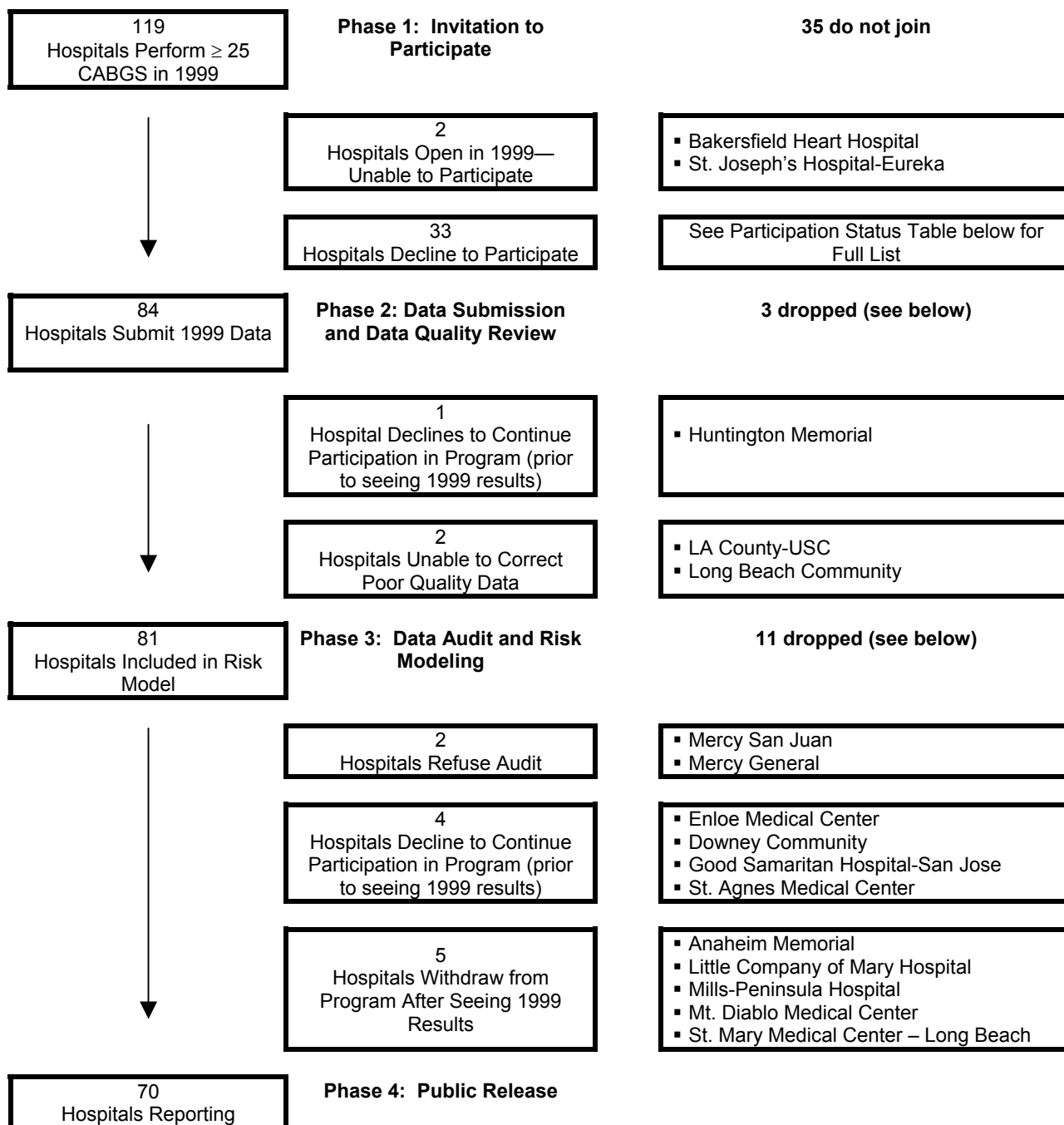


Table 1 lists the 119 hospitals in California that performed at least 25 adult isolated CABG surgeries in calendar year 1999 and their final participation status the in 1999 CCMRP data report. The following information is shown for each institution:

- 1999 data reporting period participation status;
- Region in which the hospital is located;

- Total number of heart surgeries performed;
- Total number of isolated CABG surgeries; and,
- Percent of all heart surgeries that isolated CABG surgeries represent at that institution.

The number of heart procedures and isolated CABG surgeries shown in Table 1 are derived from OSHPD's Patient Discharge Database (PDD), using definitions based on International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes. The numbers of isolated CABG surgeries in Table 1 will not exactly match those provided to CCMRP by participating hospitals, as submissions to CCMRP were based on a clinical definition of an isolated CABG surgery.

The following categories were used to define participation status for the 1999 data-reporting period. The table also shows the number and percentage of hospitals that fall into each category.

**Key to Table 1**

<b>Participation Status</b>	<b>Definition</b>	<b>Number</b>	<b>Percentage</b>
<i>Participating</i>	Hospital submitted data to CCMRP and publicly released results based on a minimum of all four quarters in 1999.	70	58%
<i>Declined to Participate</i>	Hospital did not participate in CCMRP's 1999 public reporting period.	38	32%
<i>Withdrew from Program</i>	Hospital submitted a complete set of data for 1999, but elected to withdraw after viewing their results for 1999.	5	4%
<i>Dropped-Refused Audit</i>	Hospital refused to undergo an audit of their data and was dropped from public reporting.	2	2%
<i>Dropped-Poor Quality Data</i>	Hospital was unable to provide complete and accurate data and was dropped from the analysis.	2	2%
<i>Opened in 1999</i>	Hospital initiated its cardiac surgery program during 1999 and did not have a complete set of data for 1999.	2	2%
<i>Total Number of Hospitals</i>		119	100%

**Table 1: California Hospitals that Perform Adult CABG Surgeries:  
1999 CCMRP Participation Status and Volume of Heart and Isolated CABG Surgeries**

Hospital	CCMRP Participation Status in 1999 Program	Region	Number of Heart Surgeries*	Number of Isolated CABG Surgeries*	Isolated CABG Cases as a % of All Heart Surgeries
Alta Bates Medical Center	Participating	San Francisco Bay Area and San Jose	145	96	66.2
Alvarado Hospital Medical Center	Participating	Greater San Diego	188	147	78.2
Anaheim Memorial Hospital	Withdrew from Program	Orange County	181	133	73.5
Antelope Valley Hospital Med Ctr	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	56	45	80.4
Bakersfield Heart Hospital	Opened in 1999	Central California	56	47	76.8
Bakersfield Memorial Hospital	Declined to Participate	Central California	466	342	73.4
Beverly Hospital	Declined to Participate	Greater Los Angeles	41	38	92.7
Brotman Medical Center	Declined to Participate	Greater Los Angeles	93	83	89.2
California Pacific Medical Center	Participating	San Francisco Bay Area and San Jose	321	169	52.6
Cedars-Sinai Medical Center	Participating	Greater Los Angeles	697	351	50.4
Centinela Hospital Medical Center	Declined to Participate	Greater Los Angeles	112	66	58.9
Community Memorial Hospital - San Buenaventura	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	249	187	75.1
Dameron Hospital	Participating	Central California	129	110	85.3
Daniel Freeman Memorial Hospital	Participating	Greater Los Angeles	220	154	70.0
Desert Regional Medical Center	Participating	Inland Empire, Riverside, and San Bernardino	170	135	79.4
Doctors Medical Center - Modesto	Participating	Central California	624	515	82.5
Doctor's Medical Center - San Pablo	Participating	San Francisco Bay Area and San Jose	99	83	83.8
Dominican Santa Cruz Hospital	Participating	San Francisco Bay Area and San Jose	210	159	75.7
Downey Community Hospital	Declined to Participate	Greater Los Angeles	145	106	73.1
Eisenhower Medical Center	Declined to Participate	Inland Empire, Riverside, and San Bernardino	164	123	75.0
El Camino Hospital	Participating	San Francisco Bay Area and San Jose	155	111	71.6

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Hospital	CCMRP Participation Status in 1999 Program	Region	Number of Heart Surgeries*	Number of Isolated CABG Surgeries*	Isolated CABG Cases as a % of All Heart Surgeries
Enloe Medical Center	Declined to Participate	Sacramento Valley and Northern California	258	210	81.4
Fountain Valley Regional Hospital and Medical Center - Euclid	Declined to Participate	Orange County	189	161	85.2
French Hospital Medical Center	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, Santa Barbara	325	263	80.9
Fresno Community Hospital and Medical Center	Declined to Participate	Central California	494	378	76.5
Garfield Medical Center	Declined to Participate	Greater Los Angeles	112	97	86.6
Glendale Adventist Medical Center - Wilson Terrace	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	308	268	87.0
Glendale Memorial Hospital and Health Center	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	218	181	83.0
Good Samaritan Hospital – San Jose (Columbia)	Declined to Participate	Greater San Francisco Bay Area and San Jose	544	406	74.6
Granada Hills Community Hospital	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	84	71	84.5
Green Hospital of Scripps Clinic	Participating	Greater San Diego	314	226	72.0
Heart Hospital of the Desert	Participating	Inland Empire, Riverside, and San Bernardino	118	87	73.7
Hoag Memorial Hospital Presbyterian	Participating	Orange County	370	252	68.1
Huntington Memorial Hospital	Declined to Participate	Greater Los Angeles	440	305	69.3
Inter-Community Medical Center – Citrus Valley	Declined to Participate	Greater Los Angeles	200	173	86.5
John Muir Medical Center	Participating	San Francisco Bay Area and San Jose	167	124	74.3
Kaiser Foundation Hospital – Los Angeles (Sunset)	Participating	Greater Los Angeles	2016	1603	79.5

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Kaiser Foundation Hospital – San Francisco (Geary)	Participating	San Francisco Bay Area and San Jose	1800	1280	71.1
Kaweah Delta District Hospital	Participating	Central California	482	402	83.4
Lakewood Regional Medical Center	Declined to Participate	Greater Los Angeles	246	215	87.4
Lancaster Community Hospital	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	32	25	78.1
Little Company of Mary Hospital	Withdrew from Program	Greater Los Angeles	268	167	62.3
Loma Linda University Medical Center	Participating	Inland Empire, Riverside, and San Bernardino	758	375	49.5
Long Beach Community Hospital	Dropped – Poor Quality Data	Greater Los Angeles	130	106	81.5
Long Beach Memorial Medical Center	Participating	Greater Los Angeles	565	362	64.1
Los Angeles County – USC Med Ctr	Dropped – Poor Quality Data	Greater Los Angeles	283	129	45.6
Los Angeles County Harbor – UCLA	Declined to Participate	Greater Los Angeles	246	167	67.9
Los Robles Regional Medical Center	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	376	282	75.0
Marian Medical Center	Declined to Participate	Central California	116	96	82.8
Marin General Hospital	Participating	San Francisco Bay Area and San Jose	91	69	75.8
Memorial Medical Center – Modesto	Participating	Central California	353	291	82.4
Mercy General Hospital	Dropped - Refused Data Audit	Sacramento Valley and Northern California	1566	1055	67.4
Mercy Medical Center – Redding	Participating	Sacramento Valley and Northern California	278	210	75.5
Mercy San Juan Hospital	Dropped - Refused Data Audit	Sacramento Valley and Northern California	255	186	72.9
Methodist Hospital of Southern California	Participating	Greater Los Angeles	314	262	83.4

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Mills-Peninsula Medical Center	Withdrew from Program	San Francisco Bay Area and San Jose	189	137	72.5
Mission Hospital and Regional Medical Center	Participating	Orange County	284	235	82.7
Mt. Diablo Medical Center	Withdrew from Program	San Francisco Bay Area and San Jose	628	505	80.4
Northridge Hospital Medical Center	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	164	132	80.5
O'Connor Hospital – San Jose	Declined to Participate	Greater San Francisco Bay Area and San Jose	141	105	74.5
Palomar Medical Center	Participating	Greater San Diego	169	128	75.7
Pomona Valley Hospital Med Ctr	Declined to Participate	Inland Empire, Riverside, and San Bernardino	329	271	82.4
Presbyterian Intercommunity Hospital	Participating	Greater Los Angeles	94	72	76.6
Providence Holy Cross Med Ctr	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	141	108	76.6
Providence St. Joseph Med Ctr	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	282	192	68.1
Queen of the Valley Hospital – Napa	Declined to Participate	Greater San Francisco Bay Area and San Jose	152	122	80.3
Redding Medical Center	Participating	Sacramento Valley and Northern California	712	538	75.6
Riverside Community Hospital	Declined to Participate	Inland Empire, Riverside, and San Bernardino	479	383	80.0
Saddleback Memorial Medical Center	Participating	Orange County	175	128	73.1
Salinas Valley Memorial Hospital	Participating	San Francisco Bay Area and San Jose	389	323	83.0
San Antonio Community Hospital	Participating	Inland Empire, Riverside, and San Bernardino	155	118	76.1

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Hospital	CCMRP Participation Status in 1999 Program	Region	Number of Heart Surgeries*	Number of Isolated CABG Surgeries*	Isolated CABG Cases as a % of All Heart Surgeries
San Joaquin Community Hospital	Declined to Participate	Central California	398	296	74.4
San Jose Medical Center	Participating	Greater San Francisco Bay Area and San Jose	113	83	73.5
Santa Barbara Cottage Hospital	Participating	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	421	278	66.0
Santa Clara Valley Medical Center	Declined to Participate	Greater San Francisco Bay Area and San Jose	110	87	79.1
Santa Monica – UCLA Medical Center	Participating	Greater Los Angeles	80	59	73.8
Santa Rosa Memorial Hospital	Participating	San Francisco Bay Area and San Jose	284	206	72.5
Scripps Memorial Hospital – La Jolla	Participating	Greater San Diego	693	428	61.8
Scripps Mercy	Participating	Greater San Diego	343	255	74.3
Sequoia Hospital	Participating	San Francisco Bay Area and San Jose	553	238	43.0
Seton Medical Center	Participating	San Francisco Bay Area and San Jose	589	483	82.0
Sharp Chula Vista Medical Center	Participating	Greater San Diego	343	287	83.7
Sharp Grossmont Hospital	Participating	Greater San Diego	191	146	76.4
Sharp Memorial Hospital	Participating	Greater San Diego	482	254	52.7
St. Agnes Medical Center	Declined to Participate	Central California	492	357	72.6
St. Bernardine Medical Center	Participating	Inland Empire, Riverside, and San Bernardino	704	554	78.7
St. Francis Medical Center	Participating	Greater Los Angeles	111	92	82.9
St. Helena Hospital	Participating	San Francisco Bay Area and San Jose	301	256	85.0
St. John's Hospital and Health Center – Santa Monica	Participating	Greater Los Angeles	215	152	70.7
St. John's Regional Medical Center -- Oxnard	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	201	146	72.6



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St. Joseph Hospital – Eureka	Opened in 1999	Central California	68	61	89.7
St. Joseph Hospital – Orange	Participating	Orange County	391	303	77.5
St. Joseph's Medical Center – Stockton	Participating	Central California	356	277	77.8
St. Jude Medical Center	Participating	Orange County	370	294	79.5
St. Mary Med. Center – Long Beach	Withdrew from Program	Greater Los Angeles	115	76	65.1
St. Mary Regional Medical Center – Apple Valley	Declined to Participate	Inland Empire, Riverside, and San Bernardino	205	169	82.4
St. Mary's Medical Center – San Francisco	Participating	Greater San Francisco Bay Area and San Jose	649	566	87.2
St. Vincent Medical Center	Participating	Greater Los Angeles	416	277	66.6
Stanford University Hospital	Participating	San Francisco Bay Area and San Jose	643	224	34.8
Summit Medical Center	Participating	San Francisco Bay Area and San Jose	291	195	67.0
Sutter Memorial Hospital	Participating	Sacramento Valley and Northern California	1028	639	62.2
The Hospital of the Good Samaritan Hospital – Los Angeles	Participating	Greater Los Angeles	938	648	69.1
Torrance Memorial Medical Center	Participating	Greater Los Angeles	351	213	60.7
Tri-City Medical Center	Participating	Greater San Diego	250	185	74.0
UC San Diego University Medical Center – Hillcrest	Declined to Participate	Greater San Diego	184	31	16.8
UC San Diego University Medical Center – Thornton	Declined to Participate	Greater San Diego	224	68	30.4
UCLA Medical Center	Participating	Greater Los Angeles	749	199	26.6
UCSF Medical Center	Participating	San Francisco Bay Area and San Jose	633	135	21.3
University of California Davis Medical	Participating	Sacramento Valley and Northern	295	166	56.3

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Center		California			
University of California Irvine Medical Center	Participating	Orange County	101	65	64.4
USC University Hospital	Participating	Greater Los Angeles	234	105	44.9
Valley Presbyterian Hospital	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura, and Santa Barbara	77	66	85.7
Washington Hospital – Fremont	Participating	San Francisco Bay Area and San Jose	202	170	84.2
West Anaheim Medical Center	Declined to Participate	Orange County	65	59	90.8
West Hills Regional Medical Center	Declined to Participate	San Fernando Valley, Antelope Valley, Ventura & Santa Barbara	90	75	83.3
Western Medical Center – Anaheim	Declined to Participate	Orange County	237	196	82.7
Western Medical Center – Santa Ana	Declined to Participate	Orange County	124	95	76.6
White Memorial Medical Center	Declined to Participate	Greater Los Angeles	117	99	84.6
<b>Total All Hospitals</b>			<b>39,549</b>	<b>27,641</b>	<b>69.9</b>

\*Source: Excludes three Veterans Administration Hospitals in Los Angeles, San Diego, and San Francisco that also perform CABG surgeries. For this table, counts of surgical procedures are calculated from the patient's date of discharge from a hospital (that is, a patient receiving a CABG surgery on December 30, 1999 who was discharged on January 3, 2000 is counted among 2000 discharges). The source of the numbers listed in the tables above is the Office of Statewide Health Planning and Development (OSHPD) PDD, which contains billing/administrative codes for all discharges from California hospitals. These numbers may not match the number of isolated CABG surgeries submitted to CCMRP by hospitals, which are based on a clinical definition of isolated CABG surgery.

**Number of Heart Surgeries calculated using the following ICD-9-CM codes:** 35.10, 35.11, 35.12, 35.14, 35.20, 35.21, 35.22, 35.23, 35.24, 35.27, 35.28, 35.31, 35.32, 35.33, 35.39, 35.51, 35.53, 35.61, 35.62, 35.71, 35.93, 36.03, 36.10, 36.11, 36.12, 36.13, 36.14, 36.15, 36.16, 36.17, 36.19, 36.91, 36.99, 37.32, 37.4x, 37.65, 37.66, 39.61.

**Number of Isolated CABG surgeries calculated using the following ICD-9-CM codes:** Any record with 36.1x, excluding the following: 35.1x, 35.2x, 35.3x, 35.4x, 35.5x, 35.6x, 35.7x, 35.8x, 35.9x, 37.32, 37.35, 37.5x, 37.67, 38.10, 38.11, 38.12, 38.14, 38.15, 38.44, 38.45, 39.21, 39.22, 39.23, 39.24, 39.25, 39.26, 39.28, 39.51, 39.52, 39.53, 39.54, 39.55, 39.59, V433, provided the date of the CABG 36.1x procedure and excluded procedure occurred on the same day.

### Comparison of CCMRP Participants and Non-Participants

A direct comparison of risk-adjusted mortality rates between CCMRP participants and non-participants is not possible because non-participants did not submit clinical data. However, based on OSHPD hospital PDD abstracts for the year 1999, the 70 participating hospitals performed a total of 18,701 isolated CABG surgeries, while non-participants performed a total of 8,940 cases. Table 2 provides a comparison of the number of isolated CABG surgeries and the "raw" or unadjusted death rate for participating and non-participating hospitals based on the PDD. In all but one volume category, the unadjusted "raw" observed death rate is higher among the non-participating hospitals. There are significantly more deaths in non-participating hospitals: a comparison of the death rate overall among non-participating hospitals (3.34) versus participating hospitals (2.73) finds this difference to be statistically significant at a p-value <0.05.<sup>10</sup>

**Table 2: Comparison of Unadjusted Mortality Rates for Participating Hospitals and Non-Participating Hospitals, 1999 OSHPD PDD**

Volume	Participants				Non-Participants			
	Number Hospitals	Cases	Deaths	Death Rate	Number Hospitals	Cases	Deaths	Death Rate
under 200	35	4,528	149	3.29	35	3,672	148	4.03
200 to 299	19	4,803	160	3.33	6	1,537	51	3.32
300 to 599	12	5,200	116	2.23	7	2,676	95	3.55
600 or more	4	4,170	86	2.06	1	1,055	5	0.47
Total	70	18,701	511	2.73 <sup>11</sup>	49	8,940	299	3.34

<sup>10</sup> The p-value was 0.0054 based on Fisher's exact test for the differences in events in participating and non-participating hospitals.

<sup>11</sup> This number differs slightly from the observed mortality rate of 2.76% for CCMRP participating hospitals reported elsewhere in the report. The rate of 2.73% is based on OSHPD patient discharge data (utilizing ICD-9-CM codes to determine isolated CABGs), while 2.76% is based on data submitted directly to CCMRP by each participating hospital (using a clinical definition of isolated CABGs).

